DOCUMENT RESUME

ED 063 343 TM 001 363

TITLE	Intensification of the Learning Process: Project Description. A Series of Reports Designed for Classroom Use.
INSTITUTION	Bucks County Public Schools, Doylestown, Pa.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C.
REPORT NO	R-1
PUB DATE	Feb 70
NOTE	32p.; An ESEA Title 3 Project
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Computer Assisted Instruction; *Educational Diagnosis; Educational Resources; *Goal Orientation; *Individualized Programs; *Learning Processes; *Multimedia Instruction; Program Descriptions; Stimuli; Teamwork
IDENTIFIERS	ESEA Title 3; PEP; *Personalizing Educational Prescriptions

ABSTRACT

The Personalizing Educational Prescriptions (PEP) Project has two main objectives: (1) the improvement of the diagnostic process with emphasis on the development of personalized educational prescriptions for all pupils; and (2) the improvement and expansion of multimedia services for all pupils. This report describes project goals, approaches, and the team involved. A final summary report, as well as changes in retrospect, is included. (For related documents, see TM 001 160, 364-374.) (MS)

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INTENSIFICATION of the LEARNING PROCESS

A SERIES OF REPORTS
DESIGNED FOR CLASSROOM USE

REPORT NO. 1

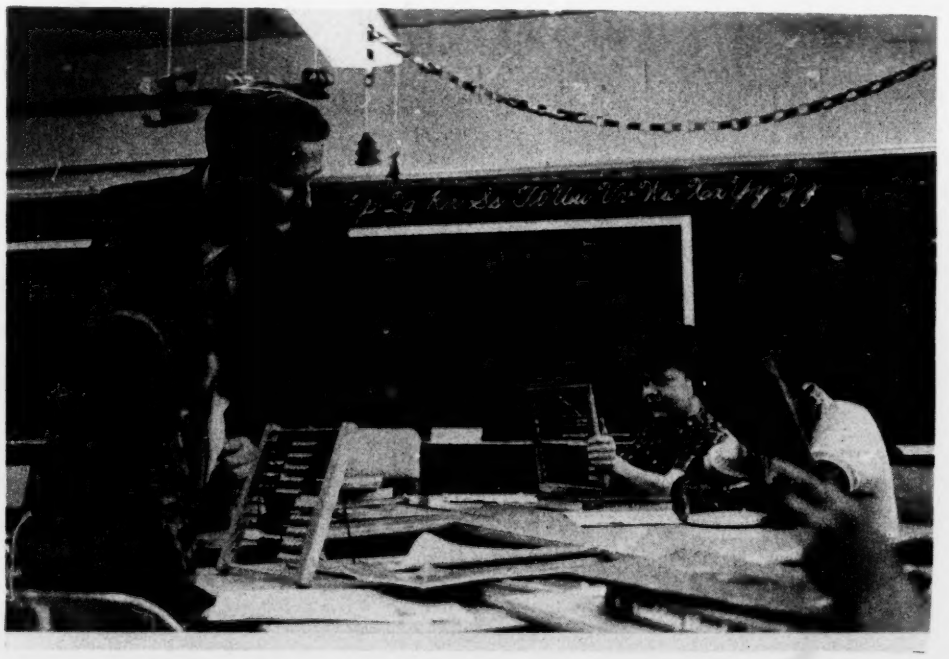
PROJECT DESCRIPTION

AN ESEA TITLE III PROJECT

BUCKS COUNTY PUBLIC SCHOOLS
DIVISION OF CURRICULUM AND INSTRUCTION SERVICES

FEBRUARY, 1970

PERSONALIZING EDUCATIONAL PRESCRIPTIONS



AN ESEA TITLE III PROJECT
PRODUCED BY
BUCKS COUNTY PUBLIC SCHOOLS
COUNTY ADMINISTRATION BUILDING
DOYLESTOWN, PENNSYLVANIA 18901

PREFACE

Traditionally the Bucks County Schools have been in the forefront of promising educational practices. Therefore, it came as no surprise that the PEP Program was funded by the Federal Government; it was equally reassuring that the NATION'S SCHOOLS identified Bucks County's "Intensification of the Learning Process" as one of the twelve most innovative proposals in the Country.

While this Program may have used a new approach, educators the World over have been giving lip-service for years to the need for personalizing education. In a day and age when we are surrounded by mechanized inventions of all sorts, it becomes even more important for us to preserve the human element related to the teaching-learning process.

The primary goal of the PEP Program is the development of educational prescriptions--prescriptions which are the result of bringing diagnostic services and multi-media services into harmonious relationship as they focus on the individual needs of youth. The success of the venture is tied to our most important educational product--the child himself. With this focus we believe administrative and other supportive services can aid the teacher so that she can directly fit the educational diet to the needs of individual students.

Dr. George E. Raab
Superintendent
Bucks County Public Schools

REQUESTING THE REPORTS

The following reports reflect the views, principles, processes and products used in the dissemination of information about the Bucks County Project for the Intensification of the Learning Process. These reports may be used as a framework for schools developing personalized educational prescriptions for its primary elementary children.

There are ten individual reports. Rather than combine all into one, it was decided to disseminate individual reports. In this way, persons interested in any one individual report may request and receive it without going through a larger document.

Each report is described below by report number, title, and content summary:

Report No. 1 — Project Description

Describes the project goals, objectives, and team involved. Explains briefly the PEP approach to learning diagnosis and use of multi-level stimuli. Also includes a final summary report as well as changes in retrospect.

Report No. 2 — Research Findings

- Part A — Design to Measure the Effectiveness of Personalized Educational Prescriptions in a Pilot Second Grade Classroom
- Part B — Design to Measure the Effectiveness of Personalized Educational Prescriptions in the Second Year of a Pilot Study
- Part C — Analysis of Pre-Test and Post-Test Data

Report No. 2 cont'd.

Part I An Analysis of Data

Part II Homogeneity/Heterogeneity of Group Variances on Pre and Post Tests

Report No. 3 Gross Motor Performance Scale

- Introduction
- Test Administration
- Reliability of Test Items
- Interpretation of Test Scores
- Suggested Circuits for Improving Performance in Tested Areas
- Physical Education Curriculum Guide

Report No. 4 Diagnostic Instruments

- Learner State Check List
- Behavioral Objectives Evaluation Response Form

Report No. 5 Pupil Description Worksheet

- Introduction
- User's Manual
- The Worksheet
- Response Sheet
- Class Pupil Profile Grade 2
- Class Pupil Profile Grade 3
- Initial Personalized Educational Prescription
- Data Collection and Processing

Report No. 6 Educational Grouping Questionnaire

- A Classification of Children of Elementary School Age
- EGQ Manual
- EGQ Instrument
- Reports Provided by Computer Programs for the EGQ System
- Psychological Categories
- Sample Print-Out
- Recommendations for Future Development

Report No. 7 — Diagnostic Instruments

- Visual Performance Screening Test
- Observing the Learner
- Questionnaire - Parent

Report No. 8 — Automated Instructional Resources Retrieval System

- How to Use the AIRRS Thesaurus
- The Thesaurus

Report No. 8a — AIRRS Supplement

- Preface
- Why a Thesaurus
- Format of Document Record
- Present Status

Report No. 9 — Curriculum Resources Center

Report No. 10 — Prototype Curriculum Guides

- Mathematics
- Language Arts
- Science
- Social Studies

Each of the above reports are products related to the two objectives of the Intensification of the Learning Process, better known as Personalizing Educational Prescriptions (PEP) project.

1. The improvement of the diagnostic process with primary emphasis on the development of personalized educational prescriptions for all pupils.
2. The improvement and expansion of multi-media services for all pupils.

Bucks County Public Schools

Project for the

I N T E N S I F I C A T I O N O F T H E L E A R N I N G P R O C E S S

Report No. 1

Project Description

ACKNOWLEDGEMENT

The work presented or reported herein was performed pursuant to a Grant from the U. S. Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U. S. Office of Education, and no official endorsement by the U. S. Office of Education should be inferred.

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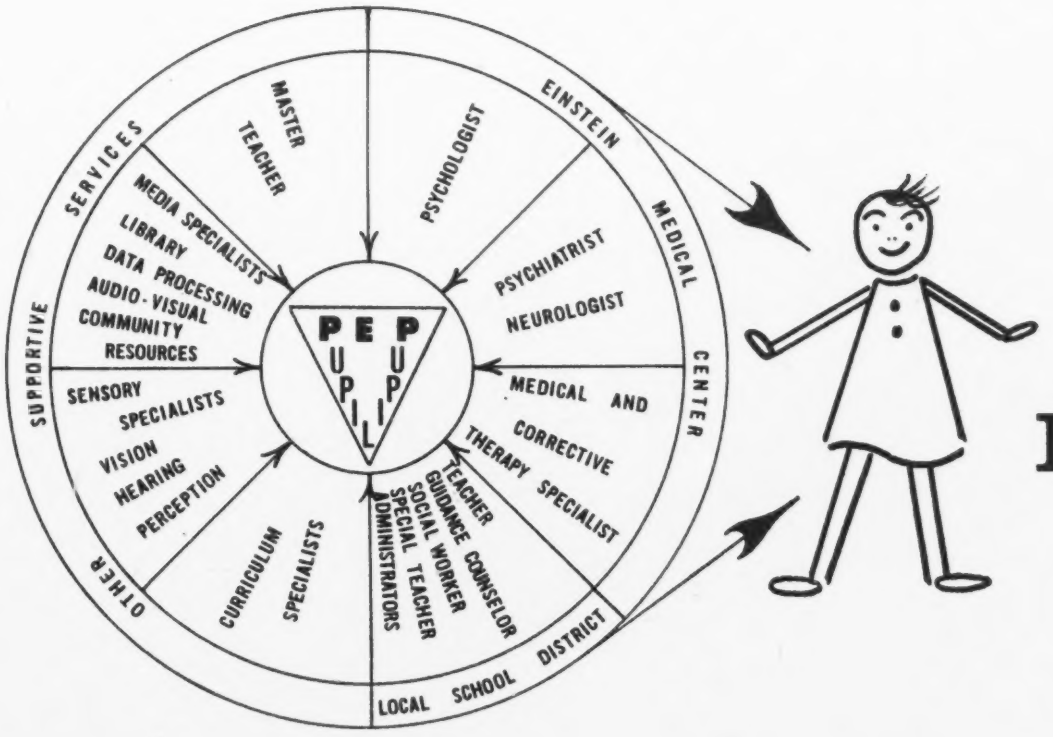


Intensification of the Learning Process Via

Personalized Educational Prescriptions

need for:

A comprehensive individual evaluation of pupils with developmental and educational problems with the primary focus on the educational needs of the pupil;

Longitudinal developmental studies of all types of pupils;

Study of available pupil appraisal techniques and the development of new techniques for clinical and classroom use;

Improvement of the range and quality of educational media and experiences in subject disciplines; and

Identifying existing multi-level learning activities and developing new multi-level learning activities which by their nature allow pupils at all levels of ability to learn effectively.

BUCKS COUNTY PROJECT

goal

Accelerate the Intensification of the Learning Process

objective

Improvement of the Diagnostic Process with Primary Emphasis on the development of Personalized Educational Prescriptions for all Pupils

objective

Improvement and Expansion of Multi-Media Services for All Pupils

need for:

Improvement of the range and quality of educational media and experiences in subject disciplines;

Identifying existing multi-level learning activities and developing new multi-level learning activities which by their nature allow pupils at all levels of ability to learn effectively;

Expanding and developing the use of multi-media and data processing techniques;

Extending in-service education;

Coordination of indigenous educational, cultural, historical and recreational resources, and

Developing more effective use of educational, cultural and historical resources outside Bucks County.

CHILD-YOUTH STUDY TEAM

The services of the Child and Youth Study Team included the development of a process whereby an exhaustive diagnosis with its resultant personalized educational prescription could be carried out for every pupil in pilot primary classrooms. In order to manage this effectively, it was necessary for members of the team to study and organize a format for the diagnosis of the pupil's learning styles. Specialists, such as psychologists, psychiatrists, sensory consultants, language consultants, perception consultants, and curriculum specialists participated in gathering and interpreting the data with the appropriate focus on the child's educational process. The findings of the diagnosis required personalized responses in the form of alternative curricular experiences and teacher strategy.

diagnostic observation

master teacher services

CURRICULUM RESOURCES CENTER AND SERVICES

The Curriculum Resources Center Staff was integrally involved with this process, in that they provided the team with representative book and non-book media relevant to facilitating the remediation of the learning problems found. In some cases, specialized materials needed to be developed to meet the particular diagnostic peculiarity. Kits of book and non-book media were developed to provide the teacher with a repertoire of activity in response to diagnosis.

Evaluation of the effectiveness of this process was a major function of this team, insofar as this process can be translated and transferred to other systems in our nation.

book

and

non-book media

COMPUTER ASSISTED TEACHING

The computer was one of the most vital resources available in the "PEP" project. It maintained a pupil data file containing learner characteristics for each pupil as well as a file of clearly defined behavioral objectives, learning activities, book and non-book media and assessment criteria. The interaction of these two complex sets provides the basis for a highly personalized educational prescription for each child in the second grade for mathematics, language arts, science, and social studies.

instructional computer technology

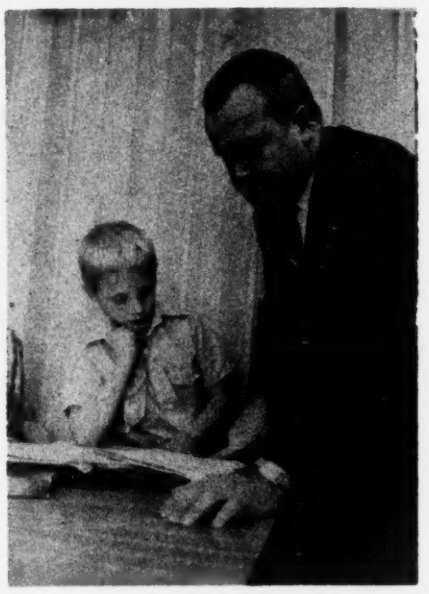
CURRICULUM SPECIALISTS

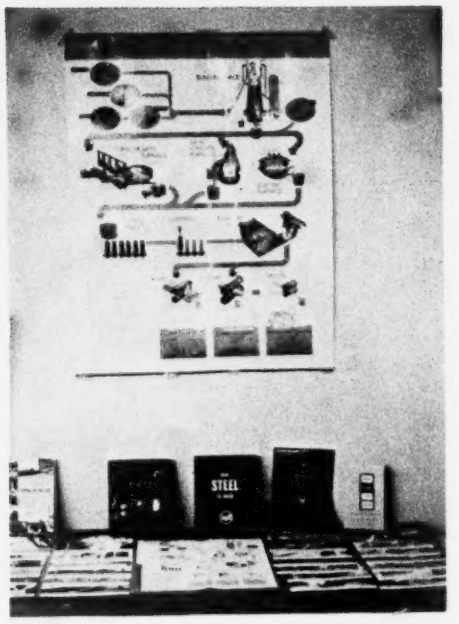
Increasing recognition of what and how much children can learn has challenged educators for some time. Specialists in the major curriculum areas of mathematics, science, language arts, and the social studies were responsible for incorporating desirable educational objectives stated in behavioral terms, developing activities related to each objective, as well as aiding the classroom teacher in evaluation.

These experts study the latest research in their fields and maintain an up-to-date professional center where current data in each discipline is stored and prepared for dissemination.

direct involvement
- student
- teacher

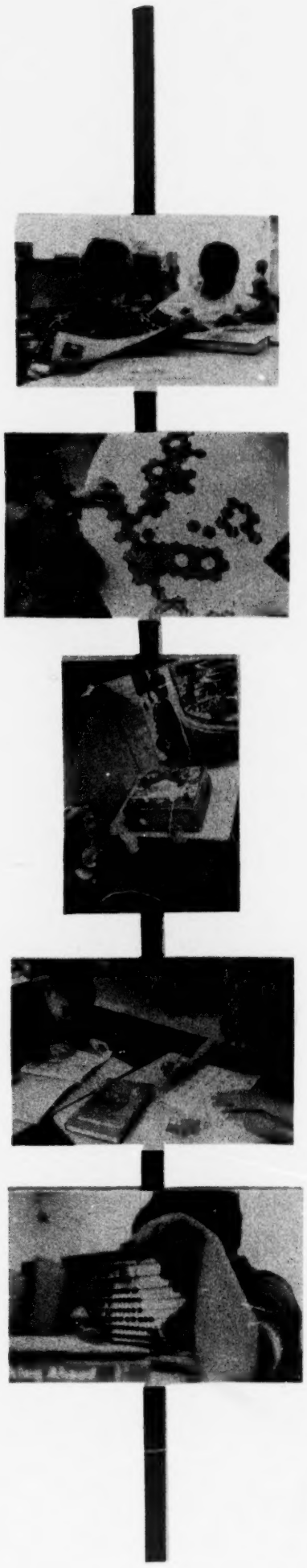
administrative services





indirect involvement
- kits
- guide
- equipment

FOCUS OF ACTIVITY



THE PEP APPROACH TO LEARNING DIAGNOSIS

How does a child learn best? What factors tend to mold the learning characteristics of childhood? How can we as educators identify these factors, in an economically feasible setting for public school systems to handle? These are a few of the probing questions the Bucks County Schools' Intensification of Learning Process Project attempted to answer within the short span of 2½ years.

A child's learning style is directly influenced by his total development. All components of his development must be evaluated for clues to his unique style of learning. For this reason, the team approach to diagnosis offered the most inclusive means of identifying learning characteristics.

The PEP (Personalized Education Prescription) diagnostic team consisted of a psychiatrist, a clinical psychologist, a social worker, the school principal and a master teacher. All contributed diagnostic information which was the basis for the resultant learning prescription for each child.

The social worker provided information gained from an in-depth two-hour family interview centering on the parents' interpretation of the physical and behavioral development of the child from birth to the present time.

The psychiatrist summarized his impressions based on a 45-minute interview and neurological screening.

The psychologist presented the results of a thorough clinical psychological evaluation touching on intellectual, personality and neurological areas.

The school principal offered early school history dealing with previous and present teacher observations, test scores, medical history, and home environmental relationships of which he is aware.

The master teacher provided the results and interpretations gleaned from the Gesell Developmental Test and the Illinois Test of Psycholinguistic Abilities, which she can administer, and the Getman Vision Screening Test administered by the school nurse.

The diagnostic information was then interpreted, within the total team conference, by the curriculum specialists (Language Arts, Mathematics, Social Studies and Science) into a personalized learning prescription for that child. Specific individually prescribed recommendations for materials and activities to be used in the content areas were cited, plus suggestions as to the behavioral approach of the teacher to the child, the defenses to support and those to discourage, the interests of the child, and recommendations for a parent conference.

The total team conference was under the direction of the project director who guided and contributed towards a total team approach.

The Project not only offered the opportunity to discover and highlight the learning characteristics of children, but it also

provided the chance to compare the expensive diagnosis obtained from the social worker, psychiatrist, and psychologist with the more economically available information obtained by the principal, school nurse, master teacher or guidance specialist, and the classroom teacher. Can our educational evaluative procedures compete favorably with an in-depth, clinically specialized diagnosis?

The source of the highest correlation with the expensive means of diagnosis appeared to be the Gesell Development Test with the Kindergarten and Primary Grade Teachers' observations; the Illinois Test of Psycholinguistic Abilities also correlated highly in that order.

The Gesell test offers a surface screening in the developmental areas of personality, communication skills, neurological growth, intellectual capacity range, interests, social and emotional behavior. The Gesell diagnosis consistently correlated with the family and psychiatric interviews and the psychological evaluation. The latter offered a much more penetrating analysis. However, a caution must be heeded. The Gesell test is limited in depth of analysis and is only as good as the examiner. Thus, it is highly recommended that an individual examiner goes through a thorough training program strengthened by an experienced understanding of child development.

The insightful Kindergarten and Primary Grade Teacher can become an extremely proficient diagnostician of learning characteristics. Many teachers, however, though able to identify these traits, tend to

look at the child in relation to the group, neglecting to make use of the child's unique learning patterns to intensify his progress.

The Illinois Test of Psycholinguistic Abilities provides an inclusive overview of the child's expressive and receptive facility in the areas of communications. The sub-test scores help to diagnose the learning modalities most preferred by the child, whether it be oral, aural, visual, or motor, or a combination of these.

Thus, the diagnostic techniques used in the PEP Project to evaluate the children were carefully appraised. The results helped to yield a more economically diagnostic program without sacrificing quality or quantity of the information obtained. The ultimate diagnostic goal of the PEP Project was to discover the learning style of the student rather than restrict pupil diagnosis to the limited and temporary state of his learning achievement.

A process was established whereby the diagnostic team reviewed all of the diagnostic data on a child, and wrote prescriptions related to the classroom activities of the child in such a way that the learning of this child could be intensified. The following list includes all of the areas that have been studied regarding each of the children in the project. This listing includes the person or persons responsible for the initiating or gathering of the information:

DIAGNOSTIC DATA	PERSON/PERSONS RESPONSIBLE
1. Physical Examination	School Doctor
2. Visual Screening	School Nurse

DIAGNOSTIC DATA	PERSON/PERSONS RESPONSIBLE
3. Speech & Hearing Evaluation	Nurse and Speech & Hearing Consultant from the County
4. Teacher Anecdotes	Classroom Teacher
5. Cumulative Folder	Principal
6. Gesell Developmental Test	Master Teacher
7. Achievement Test	Classroom Teacher, Curriculum Specialist, Principal and Master Teacher
8. Illinois Test of Psycho-linguistic Ability	Speech and Hearing Staff, County
9. Wechsler Intelligence Test for Children (W.I.S.C.)	Psychologist, Einstein Medical Center (Contracted Services)
10. Bender-Gestalt Test of Performance Visual Motor Gestalt Function	Psychologist, Einstein Medical Center (Contracted Services)
11. Dr. Mark Ozer Neurological Test	Psychiatrist, Einstein Medical Center (Contracted Services)
12. Psychiatric Interview	Child Psychiatrist, Einstein Medical Center (Contracted Services)
13. Developmental History	Psychologist, Einstein Medical Center (Contracted Services)
14. Pupil Observations	Master Teacher, Classroom Teacher, Principal, Curriculum Specialist, Child-Youth Study Director
15. Visual Perception Screening	Nurse
16. Gross Motor Skill Screening	Physical Education Teacher

LEARNER'S RESPONSE TO A VARIETY OF STIMULI

I. Problem: One of the objective tasks of PEP is the need for identifying and developing multi-level learning activities which by their nature allow pupils at all ability levels to learn effectively. The problem which arises from this task involves:

(a) identifying the student's preferred learning stimuli;

(b) providing a variety of media;

(c) evaluating the child's response to the various instructional activities.

II. What is being done now to solve the problem?

(a) The PEP diagnosis contributes information pertaining to the identification of student preferred learning modalities: visual, oral, aural, kinesthetic or tactile. The designated preference evolves from an analysis of the psychological, psychiatric, I.T.P.A., Gesell Developmental and the teacher observation data.

(b) A variety of instructional stimuli are then provided by the teacher, the curriculum specialists, and the diagnostic team in the form of materials, activities, or equipment. The learning purpose determines the setting and length of exposure. The Instructional Media Center provides the resource center for most of the materials and equipment.

(c) The child's response is evaluated in terms of his voluntary use of the media, his affective behavior when involved with

each particular type of stimuli and his overall state of learning in relation to past achievement. The teacher is in the best position to evaluate these areas both from an observational and test appraisal point of view. However, the evident difficulty is in the organization and documentation of individual evaluations for a classroom full of children.

III. PEP Team recommendations:

(a) Early identification of the student's preferred learning modality would benefit both student and teacher. Thus, an evaluation should be done as early as possible in his initial schooling experience. Some suggested appraisal techniques would be the I.T.P.A., the Gesell Developmental and the Pupil Description Worksheet based on teacher observation. For a more inclusive evaluation, a psychological examination could be administered. The PEP Project afforded an opportunity to compare the quantity and quality of the data obtained from all of these sources and it was not evident that a psychological examination be given in order to determine the preferred learning modality.

(b) The larger the variety of media available to a teacher, the more readily she can establish a motivating and successful learning atmosphere. In order to conveniently acquaint teachers with the types of materials, equipment, and activities available in all curriculum areas, an

accessible learning resource center must be developed. Ideally, each school should provide this type of service but financially a district or county center would be more feasible. In conjunction, the services of curriculum specialists could also be made available on a district or county level. A curriculum coordinator within each building could conceivable handle both diagnosis and curriculum guidance. This is more applicable to the elementary program than the secondary level.

(c) In evaluating pupil response to stimuli, it is important that the learning program be well organized for best control of the evaluation techniques. The teacher should include periodic appraisals both written and oral. Check-lists for equipment are valuable and convenient methods for quick evaluations of how often a piece of equipment is used and by whom.

The teacher aide can be of great value in providing the services needed for a well-organized evaluation program. She can see that the children are "checked out" on the equipment, make note of affective pupil response, mark materials done independently, offer guidance to small groups doing project work and generally relieve the teacher of the clerical duties involved in the organization which a multi-media approach demands.

The children should have the opportunity to explore all types of stimuli and not be restricted to the student's preferred modality

diagnosed in the prescription. This diagnosis is primarily to afford the teacher with a motivating avenue for instructional purposes. The child should be given the opportunity to select the learning activity he prefers, guided in discovering it as a purposeful learning tool rather than a toy.

The teacher can be aided by the students in appraising the multi-media by simply asking them to indicate their preferences and explaining the reasons for their selections.

The PEP Project has shown that when children are exposed to a variety of stimuli, generated by a multi-media program, their response reflects their preferential modality for learning and helps to strengthen those areas which indicate a developmental weakness. More importantly, student affective behavior was viewed as one of the enjoyments in the learning process.

Mrs. Phyllis Green
Master Teacher
PEP Project
Doyle Elementary School

FINAL SUMMARY REPORT

The Bucks County Project for the Intensification of the Learning Process, a Title III Elementary and Secondary Education Act project ended on February 14, 1970. This federally funded project has been operating through the Bucks County Superintendent of Schools' Office since February 15, 1967. In the introduction of the project proposal submitted to the Pennsylvania Department of Education and the United States Office of Education, Dr. George E. Raab, Superintendent of Schools, stated, "The primary goal of this project is the development of educational prescriptions--prescriptions which are the result of bringing diagnostic services and multi-media services into harmonious relationship as they focus on the individual needs of youth."

This Project was the result of in-depth planning by hundreds of educators in Bucks County including private and parochial school educators. The activity of the Project was centered around offices in the old Doylestown High School, later the Doylestown Borough Elementary School, and now the Annex to the Bucks County Administration Building. Services were developed to include a Curriculum Resources Center which houses a collection of educational materials and equipment for review and demonstration and offices for curriculum specialists in Language Arts, Science, Social Studies, and Mathematics (Report No. 9). The focus of the project activity was found at Doyle Elementary School of the Central Bucks School District, where the administration, teachers, and parents agreed to become part of a process aimed at gathering

information about the individual child's learning habits, and writing educational prescriptions for the intensification of his learning in school.

Several processes* and materials were developed. In consultation with Burroughs Corporation, the Project Staff organized a data processing system for gathering, storing, processing, and retrieving data concerning the learner, his curriculum and materials, and strategies for helping him learn more effectively. This system evolved out of an in-depth look at what the teacher did in the regular classroom to create a learning atmosphere. One sub-system is called the Learner Characteristics Information System. This consists of two parts: Learner Style and Learner State.* The learning style of a pupil can be described as the way he goes about learning--the elements and processes he uses to master the classroom work. The learning state of a pupil tells the teacher how much he has learned and how well he has learned it. (Report No. 4).

Another sub-system developed is the Automated Instructional Resources Retrieval System* which makes available to the teacher information about the kind of instructional materials and equipment that would help her teach curriculum units to individuals or to groups with particular learning styles.

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*Since the operational phase of the project ended, all reports for dissemination will reflect the progress made to date.

The third sub-system is called the Growth Application and Processing System which essentially helps the teacher select the learning goals and the strategies necessary for particular pupils to reach these goals.

A Pupil Description Worksheet* was organized to provide the teacher with a list of descriptive statements which could be selected by her to form a profile of the learning style of a pupil. The Pupil Description Worksheet (PDW) resulted from an analysis of the in-depth diagnosis of the individual children in two pilot classrooms at Doyle Elementary School. After educational prescriptions were written by an inter-disciplinary team of behavioral scientists and educators, a review of the important pieces of the diagnosis was made. The elements selected were then translated into statements understandable to the classroom teacher rather than the clinical language generally used by the behavioral scientists. A careful analysis was applied once again to determine whether all of the selected categories were relevant to help the teacher work with the pupils in her classroom more effectively.

The resultant PDW lists statements which describe the various aspects of the learning style of a pupil. At present the PDW contains 134 items for teacher selection. The profiles of all of the pupils' learning styles provide the teacher with a rich resource for effective classroom grouping.

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*Since the operational phase of the project ended, all reports for dissemination will reflect the progress made to date.

The PDW can also be used as a basis of a parent-teacher conference. The emphasis of the project was to engage as many persons as possible with the pupil's learning. This involvement led to discussions with parents about their experience with the pupil in a variety of learning situations. When the teacher and parents compared notes they found that they complemented each other's findings so that a needed change could be affected. Traditional parent-teacher conferences are generally not as broad in content as those provided in the project through the use of the PDW. (Report No. 5).

With an increased emphasis being placed on the individuality of each pupil, it became necessary for the teacher to provide the pupil with learning activities and equipment related to his needs. This made it necessary for the learning activities to be organized so as to provide a variety of means for learning the same skills or concepts. Multi-level materials were sought to accommodate this expansion of opportunities for learning. Preliminarily, the Automated Instructional Resources Retrieval System (AIRRS) (Report No. 8) organized the holdings of the Bucks County Film Library as a means of identifying a film or films according to a variety of index terms used by the teacher. The other multi-level resources can be added to this list of resources for easy access. The Thesaurus of the AIRRS was developed by a Systems Analyst of Burroughs Corporation with the assistance of the Curriculum Specialists.

Another outgrowth of the study is the Educational Grouping Questionnaire (Report No. 6) which is used to screen the elementary

school pupils into three groupings. Dr. William Stennis, consulting Child Psychiatrist for the Project, developed this questionnaire as a first step in determining the characteristics of a child's school behavior. Upon scoring the answers to this questionnaire, the teacher is provided with an initial broad educational grouping of pupils. This portion of the PEP project is being continued at Doyle Elementary School under the direction of Dr. Joseph Tezza, Director of Special Education, Bucks County Schools. Included with a complete description of these groups will be learning strategies or methods that the teacher can use to intensify each pupil's learning. Not only the strategies will be suggested, but also the kind of materials which would be more appropriate for each group.

Curriculum guides (Report No. 10) were prepared by the project curriculum specialists (Report No. 9) for use by administrators, supervisors, and teachers in planning the learning experiences for greater individualization of instruction. The objectives of instruction were clearly stated in terms that are easily understood by the learner, teacher, parent and supervisors. A wide range of textbooks, reference works, materials, equipment, and learning kits are found listed for the teacher. This curriculum opens the range of experiences needed to meet any one objective to a much greater degree than is available in most traditional programs.

The attempt to find the most efficient means of teaching the individual pupil led to an exhaustive diagnosis or analysis of the

learning behavior of the pupil. The clinical team of child psychiatrist, psychologist, and master teacher carefully screened the diagnostic information for the type of data that would be needed for review by the teacher. This data can now be gathered by the Pupil Description Worksheet and the Educational Grouping Questionnaire. If the teacher is in need of further information about the child, she would discuss this with her school principal, counselor or master teacher. If this failed to uncover a suitable plan, then the problem would be turned over to an interdisciplinary clinical team for more review. The project team prepared a Parent Questionnaire and Teacher Questionnaire (Report No. 7) which seek information to help an interdisciplinary team in their review of data about a child's learning behavior.

The following are some of the changes in various aspects of the Project which emphasize those features which showed the intensification of the learning process.

The value of having a Master Teacher working with 8-10 teachers in the capacity of a demonstration teacher, guidance counselor, or developmental specialist was continually being mentioned as a very important outcome of the Project. This Master Teacher should not be encumbered with administrative duties or supervisory responsibilities which would tend to dilute the efficacy of her role.

More emphasis has been placed upon the teacher's evaluation of the progress of the child in school. (Report No. 4) This was done through helping the teacher to articulate her knowledge of the child in such a way that others who receive the pupil will have a better written evaluation.

The teachers in the pilot classroom had:

1. A greater sensitivity to child development;

2. More knowledge of the newer and better teaching strategies and the media available;

3. The advantage of working with the individual and small groups over the traditional approach of working with a large group.

CHANGES IN RETROSPECT

A smooth integration of the PEP Project into the classroom, where all phases of the project had to eventually channel, necessitated several changes. In addition to the students' behavioral changes as noted by the teachers, there were also behavioral changes in PEP staff personnel, the prescription format, techniques of implementing materials, equipment, and special services into the classroom, and the ultimate management of the total program into a workable plan for any teacher to use.

Due to the beginning date of funding the project, the staff personnel was not complete until after the school year was well under way. The identification of individual job role definition demanded a period of trial and error adjustment for each staff member. The individual roles had to be securely explored before a team approach could be effective.

During the first year the team suffered from this insecurity, but the result was made strong by this early searching. The project demanded

not only PEP County Staff teamwork but cooperation between the PEP personnel, the psychological-medical personnel and the all important Doyle Elementary School faculty.

As involved individuals developed their roles in the project, the teamwork improved to an ultimate of maximum efficiency. This was, perhaps, the most rewarding aspect of the project; the blending of educators and behavioral scientists into a cooperative team, focusing on the learning process.

Another change revolved around the diagnostic prescription. For the first PEP class the diagnostic data was compiled and presented in a voluminous, unmanageable format. The prescription for each child needed further refinement in order for it to be useful to the teacher. We found ourselves having to create summary charts from the prescriptions for easy referral by the teacher. Due to the pressure of time, it was felt that it was best to collect too much information, rather than too little.

The next task was to precipitate the more useful information from the total data. The selected information formed the basis for the prescription format developed for the second PEP class. Thus, once again the trial and error method produced an informative and manageable product.

A third change, which directly affected the classroom atmosphere, was the implementation of equipment into the classroom. Once again, time pressured the development of an organized method of teacher-curriculum specialist communication.

The specialists were pressured to develop their curriculum behavioral objectives, to order materials and equipment, and to meet with the teacher for discussion of alternate activities. The materials always seemed to arrive too late or in short supply and the opportunity to aid the teacher in how to use the suggested media, to provide a more personalized approach, was either too early or too late to be of help to her. Thus, the responsibility for much of what PEP was hoping to achieve continually seemed to fall to the classroom teacher.

Once again, the anxiety that pressure of time produces actually helped to create a better way of reaching the teacher. A more efficient implementation procedure resulted the second year due to the following: the behavioral objectives, completed for the second and third grades involved, needed only to be extended; classroom teachers were given a two-week orientation program before school opened; the multi-media was either already available or arriving; a schedule was developed for the teacher, master teacher, and specialists to meet one-half hour a week at a designated time. Thus, the reciprocal flow between teacher and specialist produced a better means of blending services and materials into a classroom teacher's own teaching strategy.

These were but three of many overall changes which could be observed over the two-year period. There were others involving the manipulation of the input, but they were primarily reflections of the individual teacher's personality and teaching approach.

If PEP's diagnosis and implementation is to be successful, it must be flexible enough for any classroom teacher to use, either partially or totally, along with all curricula. If the PEP approach pushes a teacher more toward multi-media activities in an attempt to personalize, then the manipulation of the media and diagnosis must be under her organization or she will resist it. One of the most important purposes of PEP is to create a more active learning environment; the degree to which this is achieved depends upon the teacher's ability to identify her concept of an active learning process. Whatever may happen in the future, it is a well known fact that the boys and girls of the pilot classrooms at Doyle Elementary School will never forget their experiences.

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